IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Re:	Application of:	Albrecht WEISS		
	Serial No.:	10/705,489	Confirmation No.:	5102
	Filed:	November 11, 2003		
	For:	MICROSCOPE, AND METHOD FOR MODIFYING THE LIGHT FLUX IN A MICROSCOPE		
	Art Unit:	2872		
	Examiner:	Joshua L. Pritchett		
	Customer No.:	23280		
	Atty. Docket:	5005.1065		

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April 21, 2006

APPELLANTS' BRIEF UNDER 37 C.F.R. § 41.37

Sir:

Appellants submit this brief for the consideration of the Board of Patent Appeals and Interferences (the "Board") in support of their appeal of the Final Rejection dated September 19, 2005 in this application. The statutory fee of $500.00 is paid concurrently herewith.

1. REAL PARTY IN INTEREST

The real party in interest is Leica Microsystems CMS GmbH, a German corporation having its place of business in Wetzlar, Germany, the assignee of the entire right, title and interest in the above-identified patent application. The invention was assigned by inventor Weiss to Leica Microsystems Wetzlar GmbH, recorded on November 19, 2003 at reel 014697, frame 0358. Leica Microsystems Wetzlar GmbH changed its name to Leica Microsystems CMS GmbH which was recorded on November 16, 2005 at reel 017223, frame 0863.

2. RELATED APPEALS AND INTERFERENCES

Appellants, their legal representatives, and assignee are not aware of any appeal, interference or judicial proceeding that directly affects, will be directly affected by, or will have a bearing on the Board's decision in this appeal.

3. STATUS OF CLAIMS

Claims 1-27 are pending. Claims 1-27 have been finally rejected as per the Final Office Action dated September 19, 2005.

The rejection to claims 1-27 thus is appealed. A copy of appealed claims 1-27 is attached hereto as Appendix A.

4. STATUS OF AMENDMENTS AFTER FINAL

No amendments were filed after the final rejection

5. SUMMARY OF THE CLAIMED SUBJECT MATTER

Independent claim 1 recites a microscope comprising: a light source (e.g.; 1 in Fig. 1; e.g., specification paragraph [0033]) including a control device (e.g.; 22 in Fig. 1; e.g., specification paragraph [0034]) configured to control an intensity of light emitted by the light source; an illuminating optical system (e.g., 2, 3, 4 in Fig. 1; e.g.; specification paragraph [0033]) having a numerical aperture (e.g., specification paragraph [0034]) and being configured to illuminate a specimen (e.g.; 20 in Fig. 1; e.g., specification paragraph [0033]); an aperture device (e.g.; 6 in Fig. 1; e.g., specification paragraphs [0034], [0035]) disposed in

an illumination beam path (e.g.; 11 in Fig. 1; e.g., specification paragraph [0033]) and configured to modify the numerical aperture; and

a spectral correction device (e.g.; 8 in Fig. 1; e.g., specification paragraph [0037]) disposed in the illumination beam path and configured to correct a change in a spectral intensity distribution of the light emitted by the light source so that a spectral intensity distribution of light directed onto the specimen remains substantially unchanged (e.g., specification paragraph [0037]); wherein upon a change of the numerical aperture by the aperture device, the light source is controllable by the control device of the light source so that a light flux through the illuminating optical system remains substantially unchanged (e.g.; specification paragraph [0036]).

Independent claim 19 recites a method for modifying a light flux in a microscope including a light source (e.g.; 1 in Fig. 1; e.g., specification paragraph [0033]) having a control device (e.g.; 22 in Fig. 1; e.g., specification paragraph [0034]), an illuminating optical system (e.g.; 2, 3, 4 in Fig. 1; specification paragraph [0033]), and an aperture device (e.g.; 6 in Fig. 1; e.g., specification paragraphs [0034], [0035]) disposed in an illumination beam path (e.g.; 11 in Fig. 1; specification paragraph [0033]) of the microscope, the method comprising: changing a numerical aperture (e.g., specification paragraphs [0034], [0035]) of the illuminating optical system using the aperture device; controlling, upon the changing of the numerical aperture, the light source using the control device so that a light flux passing through the illuminating optical system remains substantially unchanged (e.g.; specification paragraph [0036]), the controlling causing a change in a spectral intensity distribution of light emitted by the light source (e.g.; specification paragraph [0037]); and correcting the change in the spectral intensity distribution of the light emitted by the light source so that a spectral intensity distribution of light directed onto a specimen remains substantially unchanged (e.g.; specification paragraph [0037]).

6. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Whether claims 1-5, 7 and 11-27 should be rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,022,744 issued to Leiter ("Leiter"). Whether claim 6 should be rejected under 35 U.S.C. 103(a) as being unpatentable over Leiter in view of U.S. Patent Application Publication 2003/0011910 of Weiss ("Weiss"). Whether claims 8-10 should be

rejected under 35 U.S.C. 103(a) as being unpatentable over Leiter.

7. ARGUMENTS

Rejection under 35 U.S.C. §102(b) to claims 1-5, 7 and 11-27 based on Leiter:

Independent claim 1 of the present application recites a microscope including "an aperture device disposed in an illumination beam path and configured to modify the numerical aperture" wherein "upon a change of the numerical aperture by the aperture device, the light source is controllable by the control device of the light source so that a light flux through the illuminating optical system remains substantially unchanged."

Independent claim 19 of the present application recites a method for modifying a light flux in a microscope including "changing a numerical aperture of the illuminating optical system using the aperture device" and "controlling, upon the changing of the numerical aperture, the light source using the control device so that a light flux passing through the illuminating optical system remains substantially unchanged.

It is respectfully submitted that the anticipation rejection represents clear error because the cited prior art reference, Leiter, fails to describe, expressly or inherently, every element as set forth in the claims. See MPEP 2131. Specifically, Leiter fails to teach the above-recited limitations of claims 1 and 19. Leiter does not modify the numerical aperture, nor control the light source upon the changing of the numerical aperture so as to maintain the light flux unchanged, as recited in claims 1 and 19. In contrast, Leiter merely changes the illumination light intensity using the diaphragm 25. See Leiter, col. 3, lines 1-3, and Fig. 1. The numerical aperture of the system is not changed. The term "numerical aperture" is well known to those of ordinary skill in the art. As discussed in the present specification at paragraph [0003], a modification of the numerical aperture of the illuminating optical system causes a change in the resolution achievable with the optical imaging system and a change in the contrast of the image generated using the optical imaging system. The location of the diaphragm 25 of Leiter makes it clear that a change in the diaphragm would not change the numerical aperture. Because the diaphragm 25 is disposed upstream of the light guide 5 (see Fig. 1 of Leiter), a change in the diaphragm could not cause a change in the resolution of the

imaging system or change in the contrast of an image generated, as necessarily would be present upon a change in the numerical aperture.

Moreover, since Leiter does not change the numerical aperture, it cannot control the light source so that a light flux through the illuminating optical system remains substantially unchanged upon a change of the numerical aperture, as recited in claims 1 and 19. Even if one assumes that changing the diaphragm 25 of Leiter somehow does change the numerical aperture, which as discussed above cannot be the case, Leiter does not teach controlling the light source upon the changing of the numerical aperture so as to maintain the light flux unchanged, as recited in claims 1 and 19. In contrast, Leiter merely changes the diaphragm 25 itself to control the light source. Assuming that changing the diaphragm 25 somehow does change the numerical aperture, the light source is nevertheless not otherwise controlled to maintain the light flux upon a change in the diaphragm, as would be required to meet the limitations of claims 1 and 19.

Because Leiter fails to teach the above limitations of independent claims 1 and 19, anticipation of these claims, or any of their dependent claims, has not been established.

Withdrawal of the rejection of claims 1-5, 7 and 11-27 under 35 U.S.C. §102(b) based on Leiter is respectfully requested.

Rejection under 35 U.S.C. §103(a) to claim 6 based on Leiter in view of Weiss:

Regarding the obviousness rejection of dependent claim 6 based on a combination of Leiter with Weiss, Weiss does not teach or suggest the above-recited limitations of claim 1 missing from Leiter, discussed above relative to the rejection under 35 U.S.C 102(b) based on Leiter. Rather, Weiss merely describes regulating the brightness of the light source by changing the electrical power delivered to the light source so as to compensate the spectrum of the light. Therefore a combination of Leiter and Weiss, to the extent proper, could not render dependent claim 6 unpatentable.

Withdrawal of the rejection of claim 6 under 35 U.S.C. §103(a) based on a

combination of Leiter with Weiss is respectfully requested

Rejection under 35 U.S.C. §103(a) to claims 8-10 based on Leiter:

Regarding the obviousness rejection of dependent claims 8-10 based on Leiter, Leiter does not teach the above-recited limitations of independent claim 1, discussed above relative to the rejection under 35 U.S.C 102(b) based on Leiter. Nor does Leiter suggest those missing limitations. Therefore Leiter cannot render dependent claims 8-10 unpatentable for obviousness.

Withdrawal of the rejection of claims 8-10 under 35 U.S.C. §103(a) based on Leiter is respectfully requested.

CONCLUSION

It is respectfully submitted that the application is in condition for allowance.

Favorable consideration of this appeal brief is respectfully requested.

Respectfully submitted,

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APPENDIX A

PENDING CLAIMS 1-27 OF
U.S. APPLICATION SERIAL NO. 10/705,489

Claim 1 (original): A microscope comprising:

a light source including a control device configured to control an intensity of light emitted by the light source;

an illuminating optical system having a numerical aperture and being configured to illuminate a specimen;

an aperture device disposed in an illumination beam path and configured to modify the numerical aperture; and

a spectral correction device disposed in the illumination beam path and configured to correct a change in a spectral intensity distribution of the light emitted by the light source so that a spectral intensity distribution of light directed onto the specimen remains substantially unchanged;

wherein upon a change of the numerical aperture by the aperture device, the light source is controllable by the control device of the light source so that a light flux through the illuminating optical system remains substantially unchanged.

Claim 2 (original): The microscope as recited in claim 1 wherein the control device is configured to change the spectral intensity distribution of the light emitted by the light source.

Claim 3 (original): The microscope as recited in claim 1 further comprising a light-sensitive detector disposed in the illumination beam path and configured to detect at least a portion of the light flux through the illuminating optical system and generate, as a function of the detected light flux, a signal that is usable for open-loop or closed-loop control of at least one the light source and/or of the spectral correction device.

Claim 4 (original): The microscope as claim 1 wherein the aperture device includes an aperture having a changeable diameter.

Claim 5 (original): The microscope as recited claim 4 wherein the diameter of the aperture is chageable using a motor.

Claim 6 (original): The microscope as recited in claim 1 wherein the light source is powered electrically and wherein the control device is configured to modify electrical power delivered to the light source.

Claim 7 (original): The microscope as recited in claim 1 wherein the spectral correction device includes a filter disposable in the illumination beam path, the filter having a plurality of working positions, a filter characteristic of the filter being a function of the respective working position.

Claim 8 (original): The microscope as recited in claim 7 wherein the filter is an absorption filter, the absorption filter having a respective thickness as each working position, the filter characteristic being a spectral transmittance of the filter.

Claim 9 (original): The microscope as recited in claim 7 wherein the filter is an interference filter, each working position corresponding to a respective position on a surface of the filter, the filter characteristic being a spectral interference.

Claim 10 (original): The microscope as recited in claim 7 wherein the filter is a reflection filter, each working position corresponding to a respective position on a surface of the filter, the filter characteristic being a spectral reflection capability.

Claim 11 (original): The microscope as recited in claim 7 wherein a spectral transmittance of the filter changes at least one of continuously and discontinuously.

Claim 12 (original): The microscope as recited in claim 11 wherein the spectral transmittance of the filter changes in stepped fashion.

Claim 13 (original): The microscope as recited in claim 7 wherein the spectral correction device is capable of changing a spectral intensity distribution of the light from the light source by a motion of the spectral correction device relative to the illumination beam path.

Claim 14 (original): The microscope as recited in claim 13 further comprising a motor configured to move the spectral correction device.

Claim 15 (original): The microscope as recited in claim 13 wherein the spectral correction device includes at least one of a linearly displaceable filter and a rotatable filter.

Claim 16 (original): The microscope as recited in claim 13 wherein respective intensities of the light emitted by the light source and respective working positions of the filter are predeterminable and storable as a function of respective settings of the aperture device.

Claim 17 (original): The microscope as recited in claim 1 wherein the spectral correction device is configured to influence the light intensity of at least one of a green and a red spectral region of the light from the light source.

Claim 18 (original): The microscope as recited in claim 1 further comprising a control computer configured to control at least one of the aperture device, the control device, and the spectral correction device.

Claim 19 (original): A method for modifying a light flux in a microscope including a light source having a control device, an illuminating optical system, and an aperture device disposed in an illumination beam path of the microscope, the method comprising:

changing a numerical aperture of the illuminating optical system using the aperture device;

controlling, upon the changing of the numerical aperture, the light source using the control device so that a light flux passing through the illuminating optical system remains substantially unchanged, the controlling causing a change in a spectral intensity distribution of light emitted by the light source; and

correcting the change in the spectral intensity distribution of the light emitted by the light source so that a spectral intensity distribution of light directed onto a specimen remains substantially unchanged.

Claim 20 (original): The method as recited in claim 19 further comprising:

detecting at least a portion of the light flux passing through the illuminating optical system; and

generating a signal based on the detecting, the signal being usable for at least one of open-loop or closed-loop control of the light source and for the correcting the spectral intensity distribution of the light emitted by the light source.

Claim 21 (original): The method as recited in claim 19 wherein the correcting is performed by moving a spectral correction device relative to the illumination beam path.

Claim 22 (original): The method as recited in claim 21 wherein the moving of the spectral correction means is performed using a motor.

Claim 23 (original): The method as recited in claim 21 wherein the moving of the spectral correction device is performed by at least one of displacing a first filter and rotating a second filter, the second filter including a circular disk.

Claim 24 (original): The method as recited in claim 19 wherein the correcting is performed by moving a spectral correction device relative to the illumination beam path and further comprising:

providing, as a function of respective settings of the aperture device, respective values of the intensity of the light emitting by the light source and respective working positions of the spectral correction device, and

storing the provided values and working positions in a data storage unit.

Claim 25 (original): The method as in claim 19 further comprising controlling at least one of the aperture device and the control device using a control computer.

Claim 26 (original): The method as recited in claim 19 wherein the correcting is performed by moving a spectral correction device relative to the illumination beam path and further comprising controlling the spectral correction device using a control computer.

Claim 27 (original): The method as recited in claim 19 wherein the correcting is performed by moving a spectral correction device relative to the illumination beam path so as to change the spectral intensity distribution of the light from the light source.

APPENDIX B

Evidence Appendix under 37 C.F.R. §41.37 (c) (ix):

No evidence pursuant to 37 C.F.R. §§1.130, 1.131 or 1.132 and relied upon in the appeal has been submitted by appellants or entered by the examiner.

APPENDIX C

Related proceedings appendix under 37 C.F.R. §41.37 (c) (x):

As stated in "2. RELATED APPEALS AND INTERFERENCES" of this appeal brief, appellants, their legal representatives, and assignee are not aware of any appeal or interference that directly affects, will be directly affected by, or will have a bearing on the Board's decision in this appeal.